

**Original Article**

**ACTUAL OR POTENTIAL EXTENDED SERVICES PERFORMED BY MALAYSIAN COMMUNITY PHARMACISTS, PERCEPTIONS AND BARRIERS TOWARDS IT'S PERFORMANCE: A SYSTEMATIC REVIEW**

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**ABSTRACT**

**Objective:** Aims of this review were to identify actual or potential extended services performed in community pharmacy settings, perceptions among community pharmacists (CPs), general practitioners (GPs), consumers and policymakers of these extended services and barriers towards its performance.

**Methods:** A literature review was conducted, using Google Scholar and PubMed as a searching engine.

**Results:** Identifying eight quality full texts to review which fulfil the inclusion searching criteria, revealing a wide range of actual or potential extended services performed by CPs such as counselling on asthma, cardiovascular disease, breast cancer, diabetes, smoking cessation and self-medication. GPs' perceptions towards these extended services were varied, not or in favour of CPs to perform some actual or potential extended services. Customers were in favour of CPs to perform these actual or potential extended services whereas CPs indicated a few barriers towards the performance of these actual or potential extended services.

**Conclusion:** As a conclusion, CPs in Malaysia were in the right position to perform the actual or potential extended services, collaborating with GPs to promote better medication use and enhance patients' quality of life. Some barriers towards these extended services must be intervened in order to enhance the quality of the services.

**Keywords:** Extended services, Community pharmacist, Perception, Barrier, Malaysia

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**INTRODUCTION**

In Malaysia, the community pharmacists (CPs) are in a dilemma as they are not given the main right to control all medication distribution [1]. Their role is shared with the general practitioners (GPs) who are also allowed to distribute medications to their patients. Even though a history in Europe had enacted the separation role of GPs and CPs back in a few hundred years ago [2], the separation role is not much changing in the developing country like Malaysia except for the practice in the hospital settings. Whereas CPs are still working under harsh environment, focusing more on health products or cosmetics or hygiene products to sustain existing in the market [3]. However, in other parts of the world, the community pharmacy practice is keeping on changing, transforming the practice towards more patient-oriented, adding value to the age-old role as pharmacist [4]. For example, pharmacists are now becoming a pharmacotherapy expert, advising GPs on drug therapy plan and collaborating with them to monitor the drug therapy outcome [5]. Unfortunately, it is quite hard to see CPs in Malaysia performing patient-oriented based services and if do, there is lacking information about the services. What is going on in the community pharmacy settings? Do CPs perform any extended services instead of selling health products? What are the perceptions of these extended services? What are the barriers towards these extended

services? Therefore, the aims of this review are to observe actual or potential extended services performed by CPs in community pharmacy settings, view perceptions among CPs, GPs, customers and policymakers of these extended services and identify barriers towards its performance in the context of Malaysia scenario. The rationale of this review is the fact that it can highlight some ideas to CPs, customers, policymakers and other health care professionals about actual or potential extended services performed in community pharmacy settings.

**MATERIALS AND METHODS**

A systematic search of international literature review and studies was undertaken using Google Scholar and PubMed as an electronic database, searching for abstracts in English from January 2006 till May 2017. The search terms used were: Malaysia; community pharmacist; extended roles; extended services; expansion roles; expansion services; perception; perspective; attitudes; barriers; limitation. The abstracts were evaluated by a researcher, searching for relevant materials that fitted with the inclusion criteria as depicted in table 1. The abstracts that adhered to the inclusion criteria were assessed for full texts. Then two researchers assessed in detail the contents of each text, searching for materials that fulfil the criteria as depicted in table 1. These full texts were reflected in the present review.

**Table 1: Criteria for inclusion of studies in the review**

Population	Community pharmacy, community pharmacists, customers, policymakers and general practitioners in Malaysia
Phenomenon of interest	Actual or potential extended services performed in community pharmacy settings. Perception among the community pharmacists, customers, general practitioners and members of policymaker of these extended services. Identifying barriers towards its performance
Primary outcome measures	The outcome measures but not restricted to it were: <ul style="list-style-type: none"> <li>●To describe actual or potential extended services in community pharmacy settings</li> <li>●To describe perception or attitudes among community pharmacists, customers, general practitioners and members of policymaker of the extended services</li> <li>●To identify barriers towards its performance</li> </ul>
Types of studies	Quantitative cross sectional survey, qualitative study

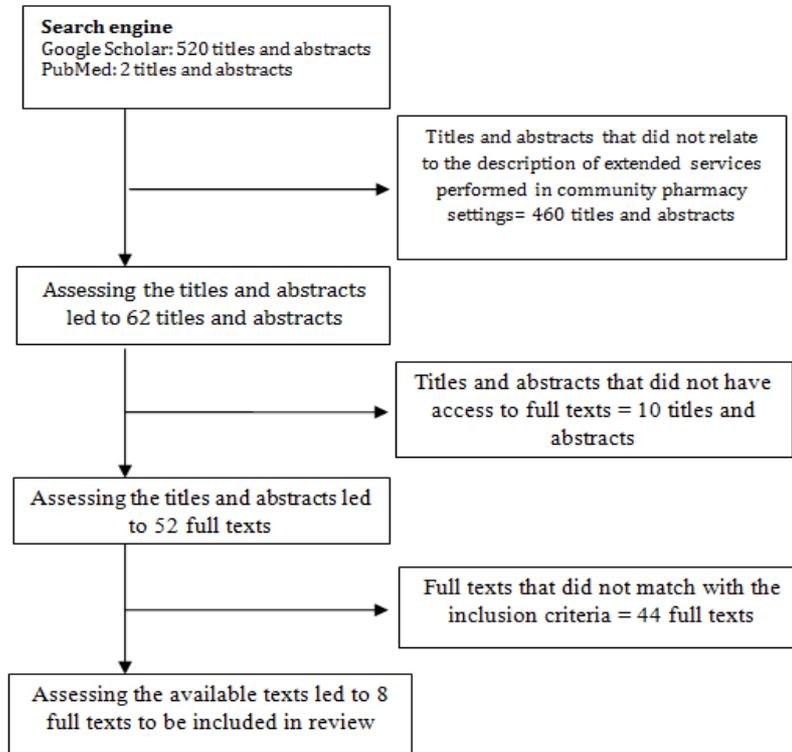
**RESULTS**

**Literature search**

A total of 522 titles and abstracts were reviewed and assessed against the inclusion criteria as depicted in table 1, led to 62 titles

and abstracts. These shortlisted titles and abstracts were assessed for full texts which led to 52 texts. Two researchers had rated these texts to identify inclusion criteria which led to 8 quality texts and these texts were included in this review.

The flow of the searching process was depicted in fig. 1.



**Fig. 1: Flow diagram of searching and inclusion criteria**

**Table 2: Literature review about actual and potential extended services, perceptions and barriers**

Authors	Study objective/ outcome measure	Method of data collection	Principal findings	Conclusion
Hassali et al (2009)	To identify health promotion activities and barriers towards its performance in community pharmacy settings	A cross-sectional survey design was conducted involving face to face interview and distributing questionnaires to 100 community pharmacists (CPs) in Penang	A total of 80% responded to the study, indicating their highly involved in diabetes counselling (n=26, 32.5%), followed by weight management counselling (n=20, 25.0%), traditional and complimentary medication counselling (n=18, 22.5%) and nutrition/physical activity (n=16, 20.0%). CPs were least involving in immunization (n=5, 6.3%), followed by drug misuse (n=3, 3.8%), special population (n=3, 3.8%) and asthma counselling (n=3, 3.8%). Varieties responded were identified towards uncertain extended role of CPs. Among barriers towards extended roles were lack of time, lack of profitability and absence of standard guideline to follow	CPs are providing a wide range of actual or potential extended services. However some barriers are addressed to be resolved. These extended services reveal that community pharmacy practice in Malaysia is not stagnant. CPs are keeping on transforming their practice towards more patient-oriented practice.
Hassali et al (2009,a)	To evaluate general practitioners' (GPs) perceptions towards professional training and roles of community pharmacists (CPs)	A cross-sectional survey was conducted, involving 160 GPs in District A	80 (50.0%) GPs responded to the study. Majority GPs disagreed if CPs were diagnosing minor illnesses (52.5%) and conducting screening test (52.5%). But GPs	GPs are now more aware about the role of CPs and ready to collaborate with CPs for patients' benefit. GPs are in favour of CPs to manage some medical

			agreed if CPs were educating patients about medication safety (52.5%), referring patients to GPs (76.3%) and collaborating with CPs (77.5%). GPs (61.3%) agreed that CPs were more towards patient-oriented than before, advising patients of selecting non-prescription medications (46.3%)	issues especially related to medication problems. However, GPs are not in favour of CPs to make diagnosis.
Beshir & Hanipah (2012)	To identify community pharmacists' knowledge, perceptions and barriers towards provision breast cancer health promotion services	A face to face interview, using structured questionnaire was conducted in district of Hulu Langat and Sepang, involving 52 CPs	A total of 35 CPs (67.0%) responded to the study. Majority respondents answered correctly about breast cancer incidence. CPs perceived that they can influence patients to conduct earlier screening to detect breast cancer (n=9, 25.7%) and they should involve in breast cancer health promotion (n=9, 25.7%). Distributing info about breast cancer (n=10, 28.6%) was important. Lack of time (n=28, 80.0%), knowledge (n=27, 77.1%) and training (n=22, 62.9%) were among the barriers	Even though none of CPs involve in breast cancer health promotion, the study reveals the potential of CPs to take part in this potential extended role. This extended role can increase the image of CPs as a professional practitioner.
Azmi <i>et al</i> (2012)	To view general practitioners' (GPs) perception of community pharmacists' (CPs) specific patient care activities	A mail-survey was conducted in the state of Penang involving all GPs, using a developed questionnaire	Majority of the respondents were favour of CPs' roles in providing public health education (58.7%), informing GPs about prescribing and prescription errors (56.0%) and referring patients to GPs who had medication issues (53.0%). However, the respondents were not favour of CPs' roles in conducting smoking cessation programme (34.8%) and providing drug information to GPs (43.0%)	There are potential roles for CPs to provide specific patient care activities and collaborate with GPs for patients' benefit. Majority of GPs are favour of CPs to manage some medical issues even though GPs are not favour of CPs to do other issues. However, GPs are actually in favour of working with CPs.
Rajiah <i>et al</i> (2014)	To view community pharmacists' (CPs) perception towards patient counselling and continuing pharmacy education program (CPEP) as well as barriers towards its performance	This was a cross-sectional study, using a self-administered questionnaire, involving CPs in Selangor and Kuala Lumpur	A total of 220 CPs responded to the study, indicating lack of time (33.0%), patient's interest (27.0%) and knowledge (20.5%) as among the barriers. Promoting public education (52.0%), increasing number of pharmacists (20.0%) and attending CPEP were the strategies to overrun the barriers	CPs can take the role to provide patient counselling. They can enhance their knowledge by attending CPEP. This CPEP can help CPs to enhance their confidence when CPs decide to counsel their patients.
Sarriff <i>et al</i> (2014)	To view the general public's level of knowledge and awareness of cardiovascular diseases (CVDs) and expectation of community pharmacists' (CPs) role to prevent and manage CVDs	A prospective, cross-sectional study, using self-administered questionnaire, involving 456 general public, was conducted in the state of Penang	Respondents had poor (46.0%), moderate (43.0%) and good (9.0%) knowledge of CVDs and its warning symptoms, respectively. Public awareness of CVD risk factors was better than their knowledge of CVDs and its warning symptoms; in which had poor (37.0%), moderate (35.0%) and good (28.0%) awareness, respectively. The majority of respondents were favourable responses on the role of community pharmacists in identifying and preventing CVD risk factors in the community	CPs shall take the role to assist the general public about managing CVDs as part of their extra services. This extended service can enhance the value of CPs' knowledge especially related to CVD medications. CPs can identify, prevent and resolve all kinds of drug related problems, specifically among the CVD patients.
Saw <i>et al</i> (2015)	to explore the private general practitioners' (GPs) views in integrating pharmacists into private	To recruit private sector GPs to participate in focus groups and semi-structured interviews. The sessions	Thirteen private GPs participated in one focus group and ten semi-structured interviews. Four major themes	CPs must enhance their knowledge and skills in order to enhance their confidence when working

	primary healthcare clinics in Malaysia	were audio recorded, transcribed verbatim and thematically analysed using NVivo 10	were identified: (i) poor understanding of pharmacists' roles; (ii) readiness to accept pharmacists in private primary healthcare clinics; (iii) lack of confidence and trust in pharmacists; and (iv) perceived increased costs with pharmacist integration. The study indicated respondents' views and acceptance were largely influenced by the amount of exposure and experience they had working alongside pharmacists. Respondents viewed a lack of confidence in pharmacists and increase in costs associated with an employed pharmacist within private primary health care clinics as barriers to integration	with GPs. CPs must also perform their best to gain GPs' trust and confidence. At the end, it is hoped that CPs will be accepted as member of health care team.
Saw et al (2017)	To investigate general practitioners' (GPs) views towards integrating pharmacists into private primary health care clinic in Malaysia	The study was involving GPs in Selangor and Kuala Lumpur, using focus groups and semi-structured interview for those who could not commit into the focus group	A total of 13 GPs responded to the study, three in focus group, and ten in semi-structured interview. The study revealed GPs had poor understanding about pharmacist's roles in private primary health care clinic, lack of confidence and trust in pharmacists and indicated high cost with pharmacist's participation. However GPs were ready to accept pharmacist's role in the primarily health care clinic	GPs must be educated about the potential role of pharmacists in the primarily health care clinic. GPs must have stronger confidence and trust with pharmacists so that both profession can work together

### Description of the included text

The characteristic of the individual texts was depicted in table 2. The texts involved a cross-sectional survey with semi-structured interview (n=1), cross-sectional survey (n=4), semi-structured interview (n=1) and focus group discussion (n=2). It is noted that the texts were assessing health promotion activities in community pharmacy settings and its barriers [6], GPs' perceptions of CPs' actual or potential extended services [7, 8], CPs' knowledge and perception of actual or potential extended services [9, 10], customers' perceptions of CPs' roles to prevent and manage major disease [11] and GPs' perception of integrating pharmacists into private primary health care clinics [12, 13].

### Extended services

A total of nineteen actual or potential extended services were noted in the review (see table 3). Medication counselling [6-8, 10] and conducting smoking cessation program [6, 8, 11] were the most rated extended services.

Surprisingly, it was found that CPs were noted the less paying attention to identify, prevent and resolve drug-related problem [8]. It was also noted that CPs were referring their customers to GPs [8] even though it was previously noted that the practice itself was more towards business-oriented practice. In addition, CPs were also noted to counsel their customers about major diseases such as asthma, diabetes and cardiovascular [6, 11], crossing over the age-old role as a medication dispenser.

### Perception towards extended services

A total of twenty perceptions were noted from the review (see table 4), demonstrating a wide range of perceptions among the customers, CPs and GPs of extended services performed in the community pharmacy settings. It was noted that GPs' and CPs' perceptions were the most rated. It was found that GPs have poor perceptions towards the extended services performed in

community pharmacy settings [7, 8]. However, GPs were noted to have favour of CPs to manage medication use among their patients and accepting referral customers from CPs [7, 8]. This review did not identify about policy maker's perception of CPs' extended services.

### Barriers to the extended services

A total of seventeen actual or potential barriers towards the extended services were noted in this review (see table 5). It was noted that lack of time, training, budget, confidence and poor understanding about CPs' roles were the most rated as actual or potential barriers [6, 8-10, 12, 13]. Besides that, it was noted that customers' health promotion activities were a unique potential barrier to the extended services [6], reflecting a trend of self-care treatment among the people.

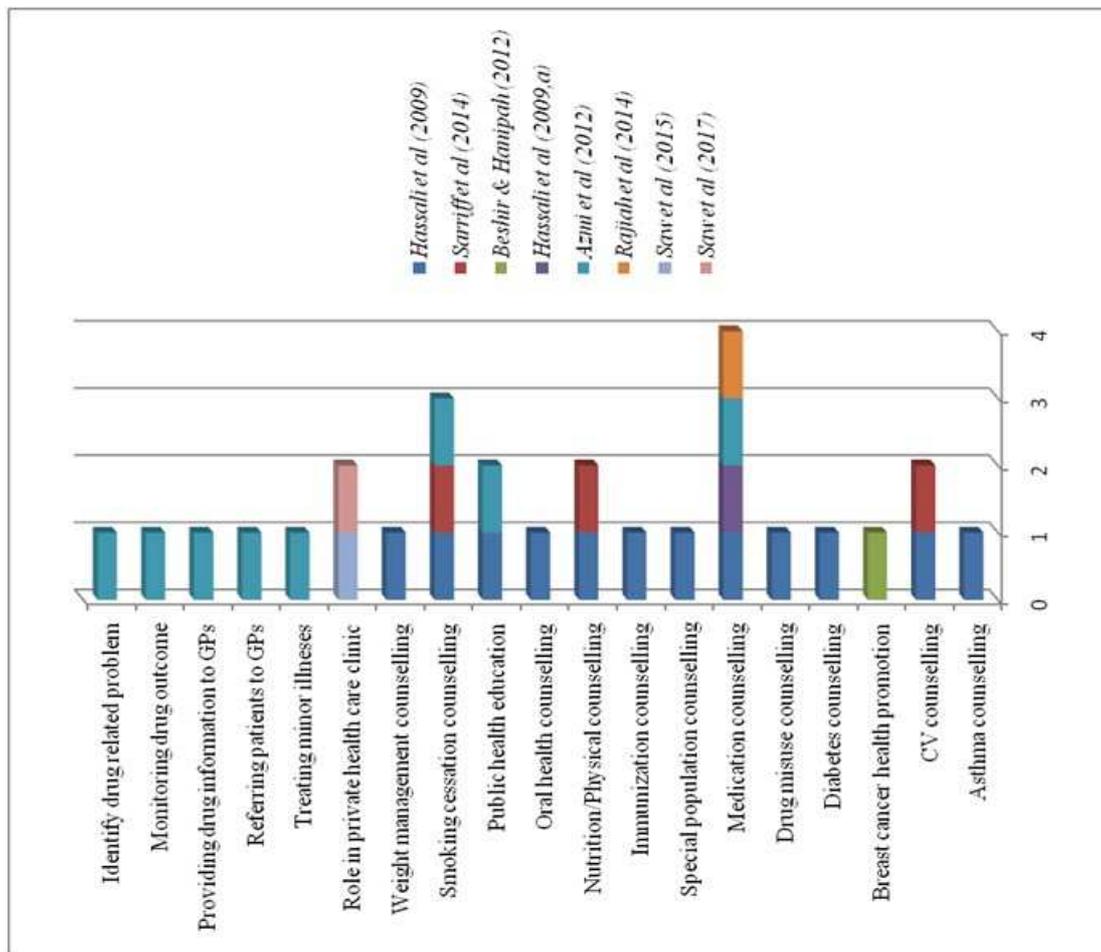
In addition, it was also noted that CPs indicated language barrier was among the barriers [10], reflecting multi-racial ethnic languages in Malaysia might have the tendency to decrease the verbal interaction between CPs and customers. Data which reflected policymakers' views about the barriers to the performance of these extended services, was not noted in this review.

### DISCUSSION

This review reveals some actual or potential extended services performed in the community pharmacy practice and it reflects a tendency among CPs to transform their current practice towards more patient-oriented services [6-13]. Such patient-oriented services noted were face counselling [6-11], treating minor ailments [8], health promotion activities [6, 8] and screening for drug-related problems [8].

This review reveals that the community pharmacy practice in Malaysia is keeping on changing and moving forward as a response to the demand of the local population. Such transformation era is also consistently observed in other countries such as Australia, Jordan, China, Canada, South Africa and the United Kingdom respectively [14-19].

Table 3: Extended services of community pharmacist, CV=Cardiovascular; GPs=General practitioners



For example in Australia, CPs are well known for offering services such as asthma, diabetes, methadone, herbal medicines, hypertension and wound care services as an extra service [14]. In Jordan, CPs have taken the responsibilities to identify, prevent and resolve drug-related s problems among those customers who consume multiple or long-term medications [15].

In China, CPs have taken initiatives to learn in detail about the philosophy of pharmaceutical care so that they can serve the customers with the highest standard of practice [16]. In Canada, CPs decide to involve in conducting smoking cessation program and screening their customers for hypertension, diabetes, dyslipidaemia and sexual health problem as a part of their extra services [17]. Surprisingly, in future CPs in South Africa would be given with more exclusive right in their practice.

They will be given the right to examine their customers, make a specific diagnosis, prescribe a specific medication to their customers and monitor the outcome of the drug therapy plan [18]. However, in a developed country like the United Kingdom, CPs were only given the right to prescribe some exclusive medications as a part of their extended services while collaborating in work with other GPs for the benefit of their patients [19].

These scenarios reflect CPs are taking the challenge to e improve their practice through extended services. Nevertheless, the actual or potential extended services performed in the community pharmacy settings in Malaysia are quite lagging from other countries.

However, this review reveals that CPs have potential to extend their services towards more patient-oriented [6-13], and enhance their image as a healthcare professional.

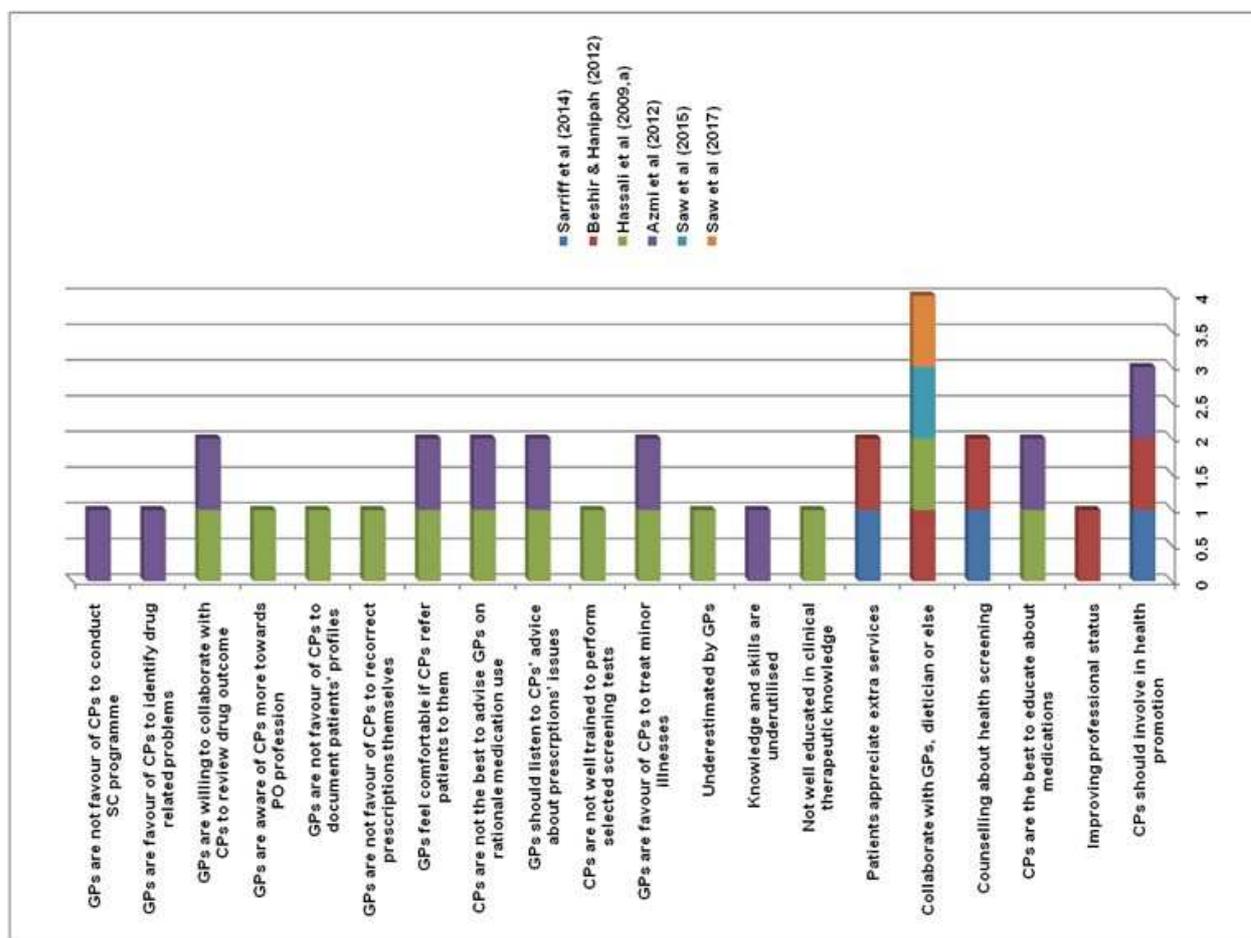
This review indicates some perceptions towards the actual or potential extended services performed in the community pharmacy settings. It is noted that GPs are underestimating CPs in variable perspectives such as lack of clinical therapeutic knowledge and skills. Therefore, GPs are not in favour of CPs to provide extra services such as advising them about medication use or else. Other previous studies which are conducted in developed and developing countries are also indicating some variable perceptions towards the extended services.

For example, CPs in Jordan are not given the right image as a professional practitioner in the health care team [15]. GPs and local people are describing CPs as a businessman rather than a health care provider. As a result, CPs do not have the opportunity to provide extra services to serve the population.

Main reason noted is the extended services are not demanded by the local population. In contrast, CPs in the developed countries like Australia and the United Kingdom are in favour of providing a wide range of extended services [14, 19]. It is noted that the extended services are a part of the demand coming from their association [14] and government [19]. In addition, CPs have strong desire to perform their knowledge and skills in order to improve their current practice [14]. Besides that, CPs in South Africa believe that they should provide more extended services and take more responsibilities with drug therapy management [18]. Whereas CPs in Hong Kong decide to extend their services as a part of establishing a c working relationship with other health care practitioners [20].

Believe that the extended services can benefit their customers in terms of safety and effectiveness of medication use [20]. Interestingly, CPs in Nepal believe that the extended services are a part of their strategies to improve their sales as well as overcome business competition [21].

**Table 4: Perception towards extended services, GPs=General practitioners; CPs=Community pharmacists; PO=Patient-oriented; SC=Smoking cessation**



Nevertheless, CPs in Dubai has decided to perform extra services in their community pharmacy settings because they believe that the services might have potential to benefit their customers in varieties perspectives [22]. In short, these variable perceptions noted around the world can highlight some ideas to improve the performance of extended services in the community pharmacy settings.

In this review, it is noted a wide range of barriers towards actual or potential extended services performed in the community pharmacy settings. Interestingly, the barriers are not much different from other barriers noted in other countries. For example, it is also noted that lack of time [14, 17, 19, 21, 23-26], budget [17, 19], reimbursement [14, 16, 17, 19, 23, 25, 26], training [14, 19, 20, 29], self-confidence [14, 18, 19], knowledge [14, 16, 17, 20, 21, 23, 27-30], counselling room, [17-19, 23] and shortage of pharmacists [14, 16, 17, 27] are among the barriers in the United Kingdom, Australia, Belgium, Nepal, Pakistan, China, South Africa, Netherlands, Singapore, Canada and United Arab Emirates respectively.

More interestingly, our review reveals a unique barrier towards extended services which has not been noted in other previous studies. It is the customers' health promotion activities. This activity is referring to supplement-or vitamin-based products that are accessible in the market and the products do not need for GPs' or CPs' supervision to consume.

For example, those people who involve in a multi-level health product scheme are allowed to promote and sell supplements or vitamins to their customers. Most of the time, the people are absence of clinical therapeutic knowledge and skills. Although they might attend a short course to learn more about medical issues and their

health products, they are not in the right position to advise people about the medical problem.

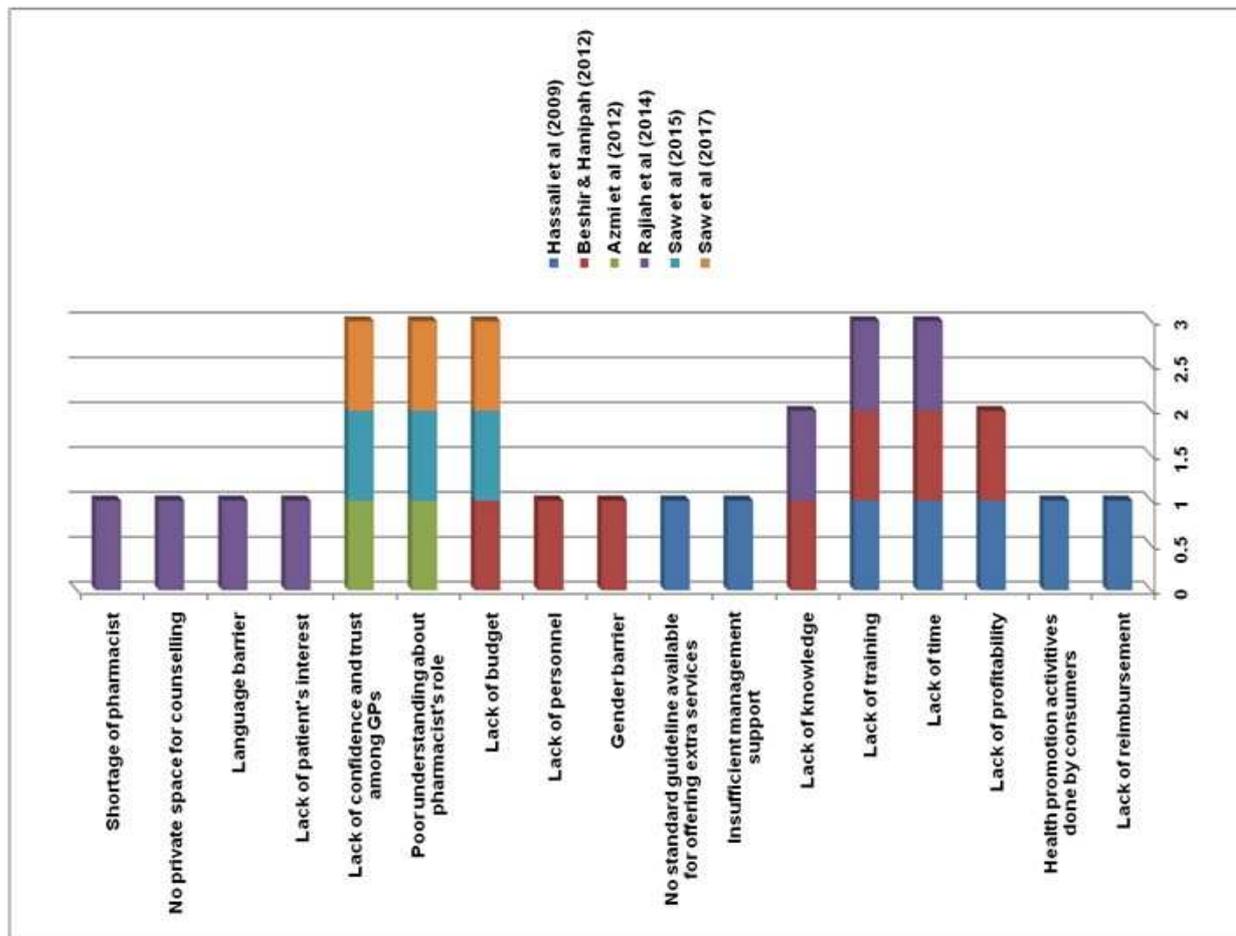
However, in this scenario, they are potentially acting as a drug expert and giving inadequate advice to their customers. Unfortunately, it is believed that the customers have given their trust to them to give some advice and products for maintaining their health.

As a result, it becomes a barrier towards the performance of extended services in the community pharmacy settings. It is because that CPs have to work hard to gain trust from the people to accept their services rather than seeking for unprofessional advice. In short, it is noted that there are some barriers that require for intervention before the extended services can be performed in the community pharmacy settings. Interestingly, the barriers are consistently noted around the world.

In this review, it is noted that the actual or potential extended services performed in the community pharmacy settings are consistent with the Malaysian National Medicines Policy. This policy which was endorsed by the Malaysian Cabinet last October 2006, with a full-term review in October 2012 indicates all health care practitioners must make sure the medications that supplied to their patients are safe, appropriate and quality [31].

In addition, the healthcare practitioners must empower their patients in the areas of medication adherence, responsible with self-medication, storage, and self-confidence to interact with other healthcare professionals [31]. The healthcare practitioners should also facilitate continuity of care and they should collaborate with each other and share patient medical and medication profile without compromising patient's confidentiality [31].

Table 5: Barriers towards extended services



In short, the Malaysian National Medicines Policy indicates all healthcare practitioners including CPs to play more comprehensive roles in their practice, enhance patients' quality of life and reduce mortality rate due to medication use. Interestingly, it is noted in this review that CPs are in the right track to perform these duties to serve the people. It is noted that CPs have performed some actual extended services such as counselling their customers about asthma [6], cardiovascular [6, 11], breast cancer [9], diabetes [6], drug misuse [6], medicine [7, 8, 10], self-medication [8], smoking cessation [6, 8, 11] and weight management [6]. This scenario reflects that CPs are no longer sitting at the back of the counter and trying to avoid of interacting with the people. The fact is that CPs have come out of their box and start to interact with people in order to improve their medication use. In short, this review reveals that the actual or potential extended services performed in the community pharmacy settings are consistent with the Ministry of Health's future plan which is improving the quality of life among the Malaysian population.

The actual or potential extended services performed in the community pharmacy settings requires CPs to enhance their knowledge and skills. It is noted in this review that GPs are underestimating CPs' clinical therapeutic knowledge [7]. Therefore, GPs might not in favour of CPs to manage some extended services such as smoking cessation program, order for the blood test or else [7, 8]. As responding to the scenario, GPs must know about the available advanced training for CPs who want to perform extended services. For example, the Malaysian Academy of Pharmacy has been dedicated to advancing the pharmacists' roles through education, advocacy, research and services towards better pharmacy practice [32]. This constitution offers the pharmacists a wide range of knowledge and skills such as certified smoking cessation service provider, osteoporosis, oral contraceptives, understanding generic medicines, dengue and diabetes medication therapy adherence

clinic. A few years back, the constitution has collaborated with the American Pharmacists Association to certify pharmacists as a specialist pharmacist in areas of ambulatory care, oncology, psychiatric, pharmacotherapy and critical pharmacy. These knowledge and skills reflect the competent of the certified pharmacists to perform the extended services. Therefore, the certified CPs should no longer be underestimated if they have the chance to perform the extended services in the community pharmacy settings. Therefore, CPs should take the opportunity to enhance their knowledge and skills, as responding to the demand of the population in Malaysia. Furthermore, it is noted that in the previous studies conducted in India and Indonesia which reveal the educational intervention can enhance knowledge, attitudes, and practice among the trained CPs who perform extended services in the community pharmacy setting [33, 34].

**CONCLUSION**

This review reveals that CPs in Malaysia has the potential to extend their services to serve the people. Even though there are some barriers towards these extended services, the barriers can be intervened on condition that there is a will to change among CPs as well as strong political support from the government to enhance the quality of pharmacy practice. Some positive perceptions among the customers and GPs of these extended services can encourage CPs to have the self-confidence to perform these actual or potential extended services.

**LIMITATION OF THE STUDY**

It is noted that some full access texts are not available until the charges to view the contents are being settled. As a result, the scenario might have a tendency to influence the quality of this

review since there is lack of article to review. Therefore, it is hoped that in future the researchers will be allocated with an appropriate budget to assist them to pay for the charges to review all the available full access texts in the online internet.

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#### AUTHOR CONTRIBUTION

A#1 conducted, collected and analyzed data collection. A#2 monitored the quality of data collection. A#3 provided expertise in extra comments.

#### CONFLICT OF INTERESTS

Authors declare no conflict of interest in the study

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